

# UFAQ PM<sub>2.5</sub> WORKGROUP

Round 2 Meetings: Dec 2011



# Introduction and Key Points

- ◎ DAQ scientists have accomplished a lot since the last meetings, and are discovering important things as the science unfolds. But there is still a lot of work to do.
- ◎ The workgroups have been instrumental in refining our information, a process we are certain will continue. DAQ appreciates your work.
- ◎ We are on schedule and on track, and remain in close collaboration with EPA. Our fundamentals remain unchanged:
  - Do what's right for public health.
  - Develop an approvable SIP.
  - Inclusive and transparent public process.
  - Strive for consensus and the best possible outcome.

# Meeting Outline: Refer to Agenda

## **Segment 1: Process Review and Data Update (9:00-10:10 am)**

- Welcome and Meeting Outline
- PI Review and Top Strategies
- Inventory and Modeling Updates (2008/2014/2019)
- Model Runs, the Reduction “Basket” and County-Specific Targets
- Break

## **Segment 2: Workgroup Breakouts (10:10 am-12:00 Noon)**

- Breakout Period 1: Area/Mobile/Point at different tables
- Breakout Period 2: Area/Mobile/Point at different tables
- Breakout Period 3: Area/Mobile/Point at different tables
- Wrap-up, Next Steps, and Voluntary Assignments
- Adjourn



# Public Involvement Review

# Constituent Group Review

- ◎ How did it go from your perspective?
- ◎ What DAQ did with your responses?
  - Carefully read each one.
  - Broke them down into tabs:
    - Ranked Strategies
    - Follow-Ups Needed
    - Strategy Analysis

# 1. Survey Response Summary

- ◉ Limeask survey service used.
- ◉ About 120 sent out, 72 completed (60%)
- ◉ 3 completed in September, 66 in October, and 3 in November.
- ◉ 45 provided ranked strategies; 40 were reasonably detailed.
- ◉ 45 asked clarifying questions or requests; all were systematically considered and addressed.
- ◉ 29 made it all the way to number 5.
- ◉ 12 letters received through govcomments.com

## 2. Top Themes

- ◉ Improve transit/bike/pedestrian (24/168)
- ◉ Control idling/traffic flow (20/168)
- ◉ Implement I/M programs (17/168)
- ◉ Reduce VMT programs (13/168)
- ◉ Yellow/Red day restrictions (12/168)
- ◉ Vehicle technology/retrofit (11/168)
- ◉ Livestock measures (10/168)
- ◉ General/uniques 24
- ◉ Others: PI/Educ/Plann; Alt Fuels; Building Efficiency; Cooking/burning; Solvents; Alt energy; Monitoring

### 3. Mobile vs. Area vs. Point

- ◎ A very significant majority of strategy ideas focused on Mobile sources.
- ◎ Area sources blended somewhat into several categories.
- ◎ Point sources were discussed mostly in passing.
- ◎ In your first-place rankings, Mobile ranked #1 (33), Area ranked #2 (11), and Point ranked #3 (4)



## 4. Unique Ideas

- ◎ Federal reformulated gasoline
- ◎ Adopt California standards on small engines
- ◎ Paving dirt roads
- ◎ Vapor control at service stations
- ◎ Lower LDAR leak definitions
- ◎ High-efficiency vehicle parking

# PI Summary

- ◎ The responses were diverse and professional.
- ◎ UDAQ considered them carefully, and in many cases made significant adjustments as a result.
- ◎ As will be explained later, they were used as a basis for developing a “Basket” of strategies to run through the modeling.



# Inventory and Modeling Updates

# Overview of Technical Information

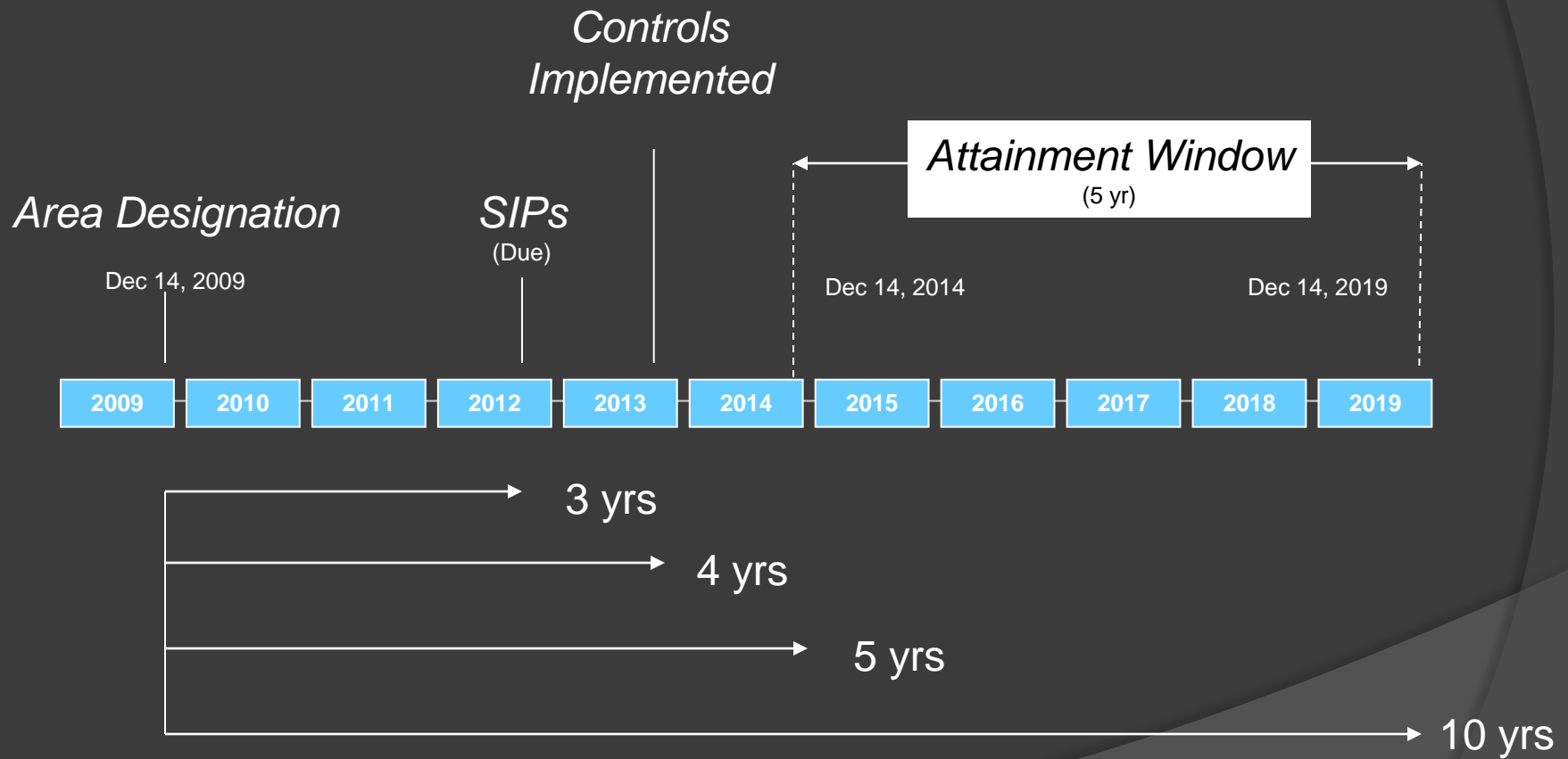
We'll be presenting some model results, showing:

1. Where we expect to be relative to the NAAQS assuming no additional controls
2. What reductions in PM<sub>2.5</sub> are expected due to the emission reductions recommended by the workgroups
3. What additional emission reductions may be necessary to attain the NAAQS

# Emissions Inventories and the Air Quality Model

1. What inventories are used in making the prediction
2. How those inventories are prepared

# Attainment Dates



# Projection Years

We'll be looking at both sides of this attainment window...

- Which means we need the inventories of 2014 and 2019
- And we'll compare each of these years to the baseline inventory of 2008

# Inventories

## 2008 – the Baseline Inventory

- ◎ Represents Actual Emissions from all source categories

## Projection-Year Inventories (e.g. 2019)

- ◎ Contain Assumptions about what emissions are likely to be



# Sector-Specific Assumptions

## ◎ Point Sources

- Allowable emission rates
- SIP related emission controls

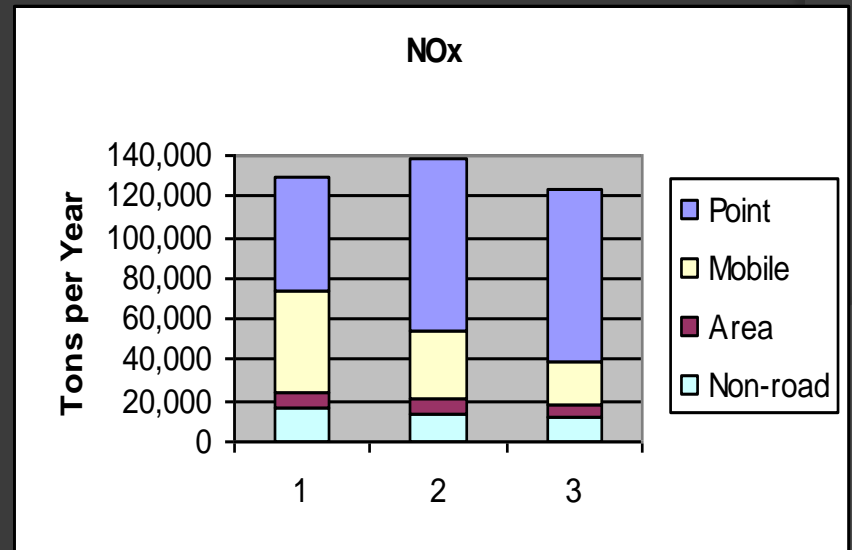
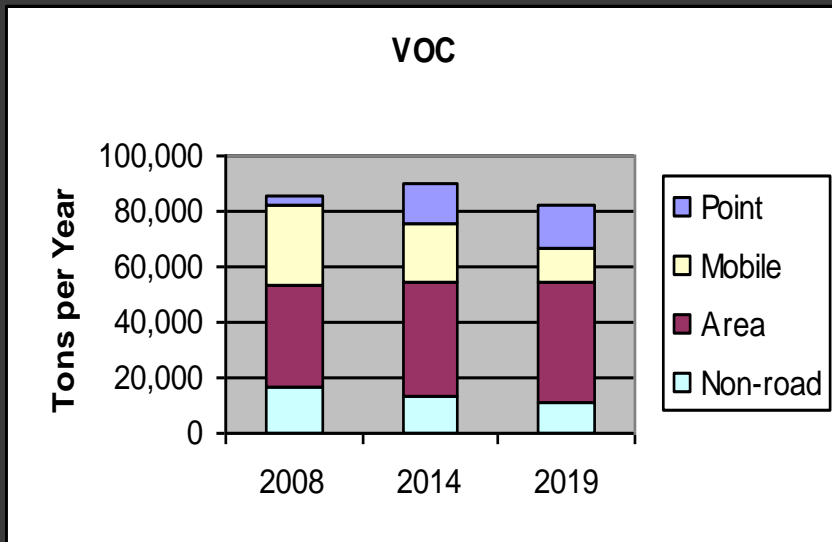
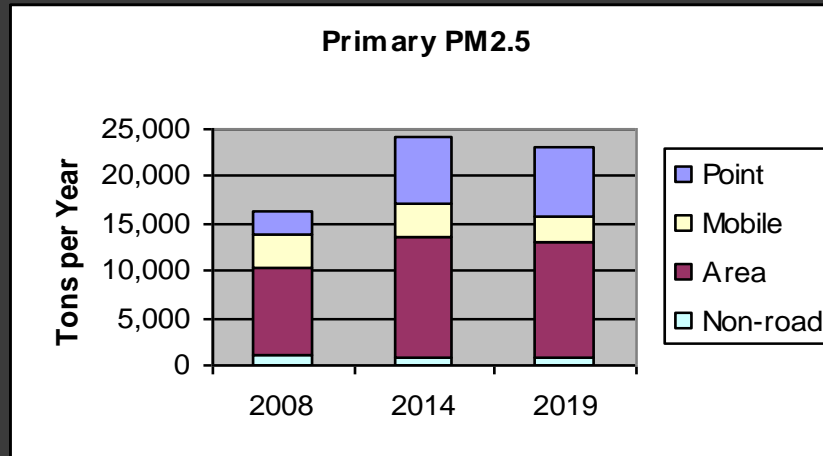
## ◎ Area Sources

- Accounts for growth in population
- Includes economic forecasts

## ◎ Mobile Sources

- Accounts for growth in vehicle miles traveled (vmt)
- Includes fleet turnover with newer, cleaner vehicles

# Inventories used in the AQ Model



# Basket of Control Strategies – Mobile Source

- ◎ I/M program for counties that currently don't have one
- ◎ CARB LEVII vehicle emissions standards
- ◎ One pound decrease in RVP
- ◎ Bundle of additional measures assumed to achieve a combined 3% reduction:
  - Alternative fuel fleets (e.g. natural gas and electric)
  - Diesel retrofits
  - Idle reduction
  - Trip reduction measures

# Basket of Control Strategies – Area Source

- ◎ 98% of the inventory included in the basket
- ◎ Need to consider rule effectiveness when implementing regulatory strategies
- ◎ Applied a conservative value for effectiveness to account for varying degrees of technological use and implementation, resulting in:
  - Restaurants – 22% VOC and PM
  - Livestock housing – 20% VOC
  - Residential fireplace/wood stove – 80% VOC
  - Remaining categories – 15% VOC
- ◎ Ammonia – dietary manipulation and manure management:
  - 5% reduction

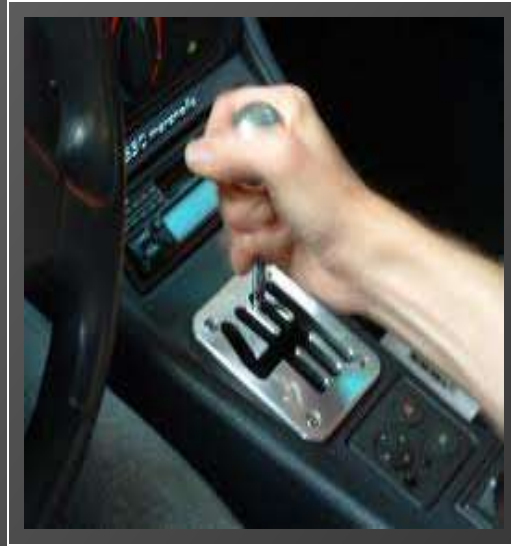
# Basket of Control Strategies – Point Source

- ◎ Point source emissions reductions will be addressed through the rule making and application of RACT on a case-by-case basis
- ◎ Focusing on narrowing the gap between actual and allowable emissions
  - Assumed a 15-20% reduction in the difference between actual and allowable emissions

# Basket of Control Strategies - Summary

- ◎ Taken as a whole, the basket of emissions strategies resulted in:
  - 10.3% reduction in primary 2.5
  - 14.2% reduction in VOCs
  - 9.2% reduction in NO<sub>x</sub>

# Model Attainment Test Results



**Same Meteorology.    Same Episode(s).    Same Model.**

**Different Emissions**

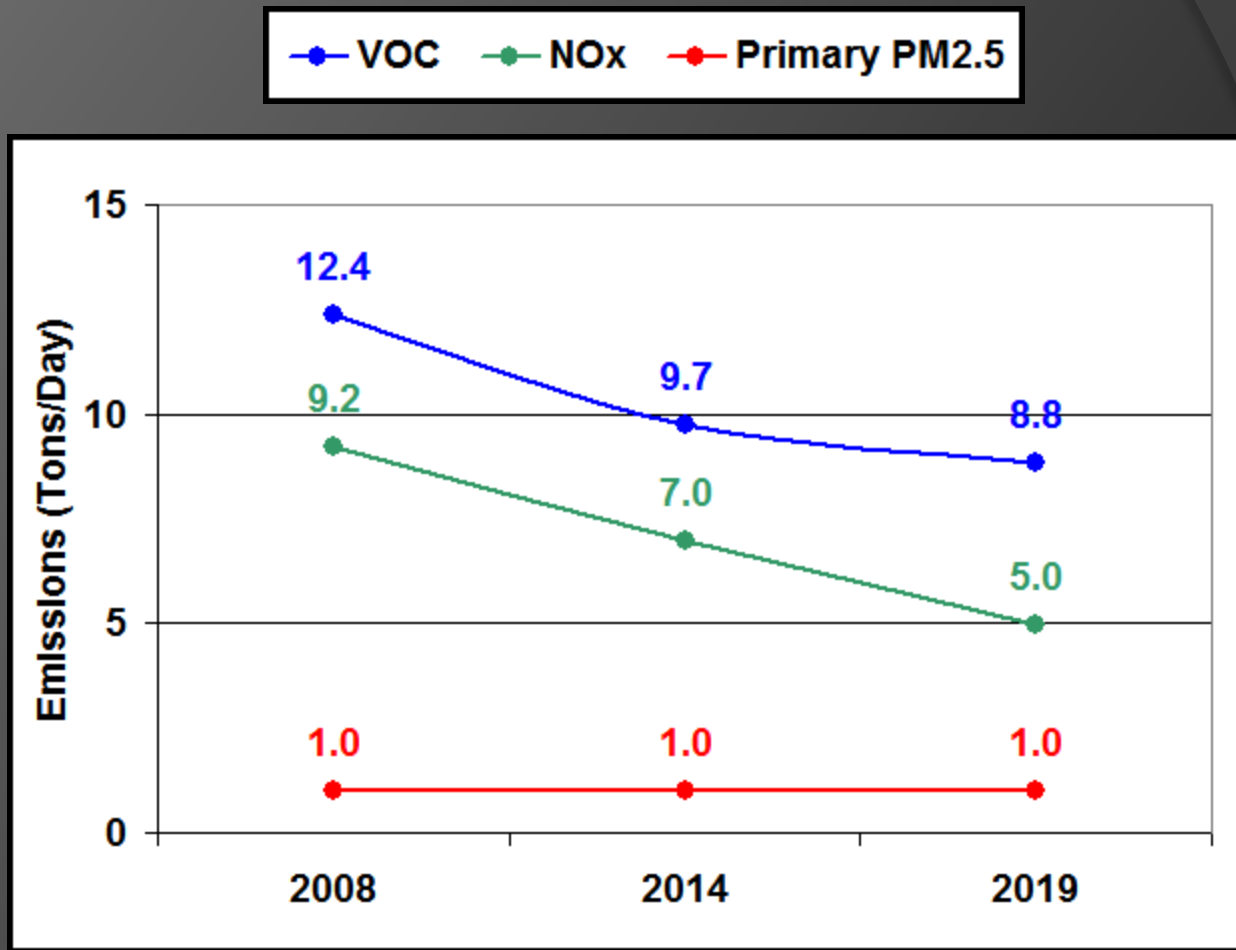
## \* Disclaimer \*

Attainment test results are **NOT FINAL** and **WILL CHANGE**

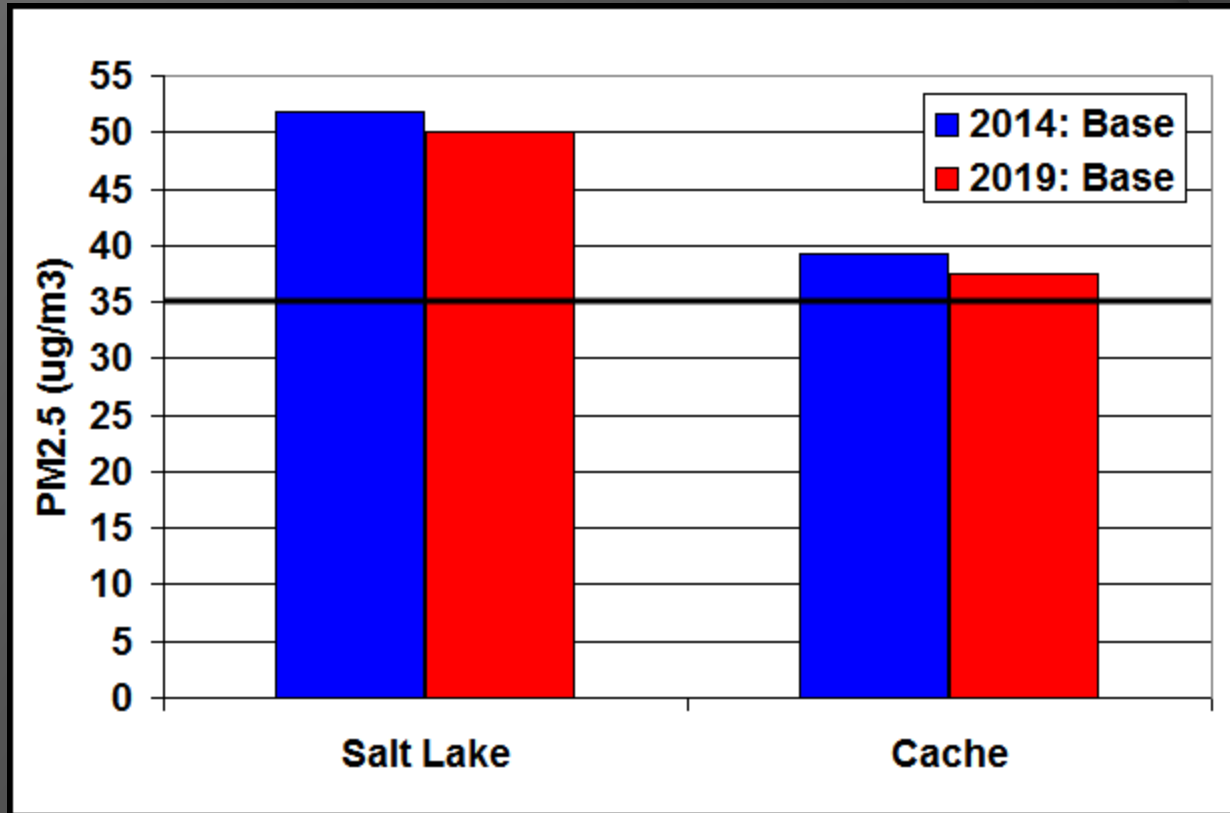
- Mobile Emissions
- Allowable Emissions
- Design Value Change



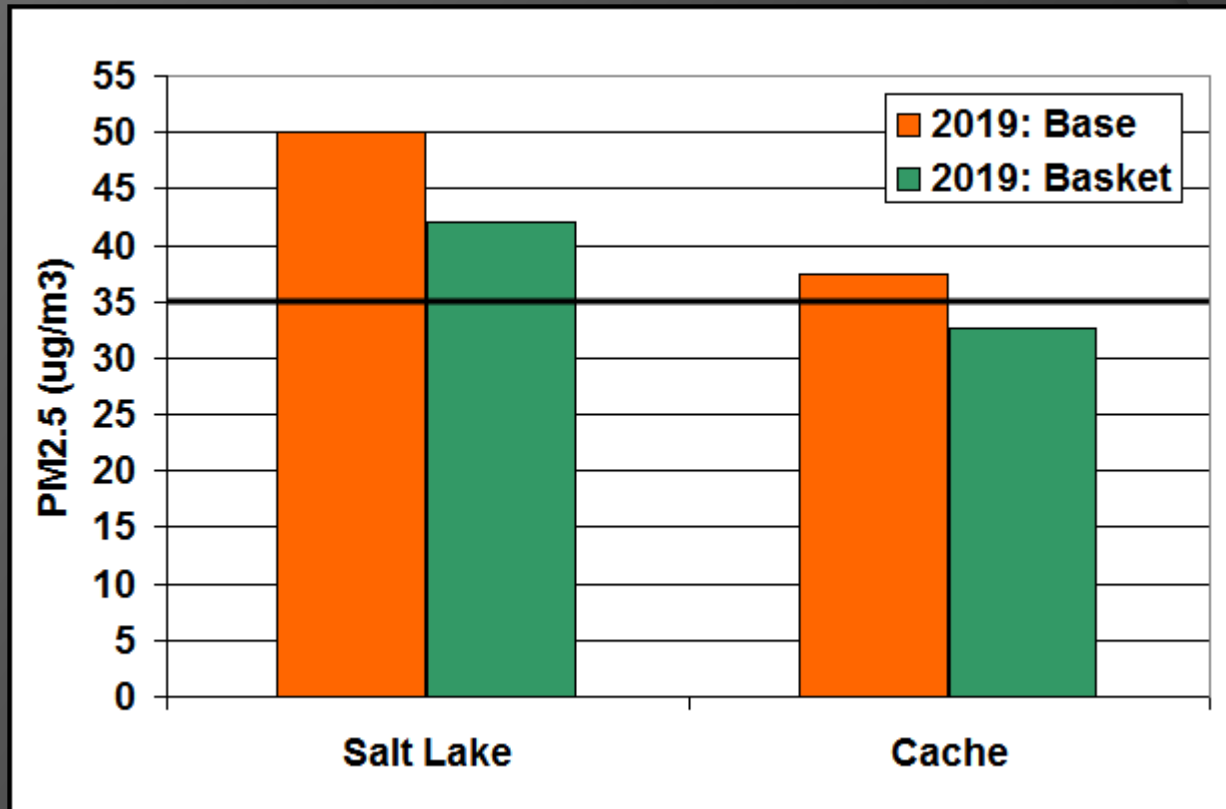
# Cache County Emission Trends



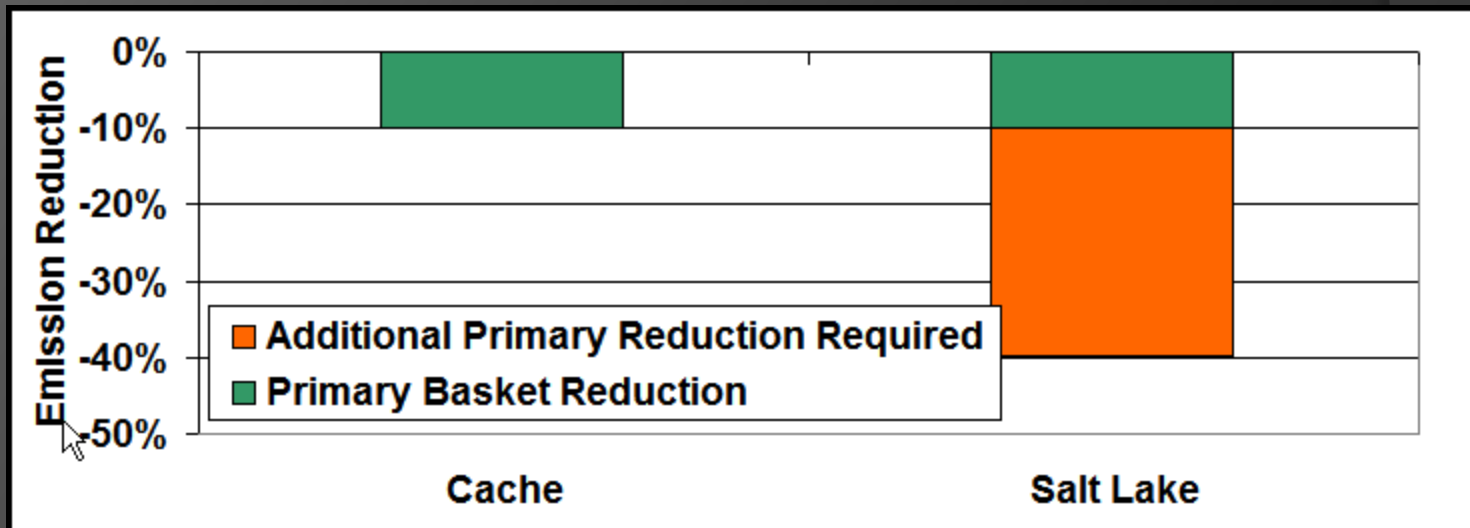
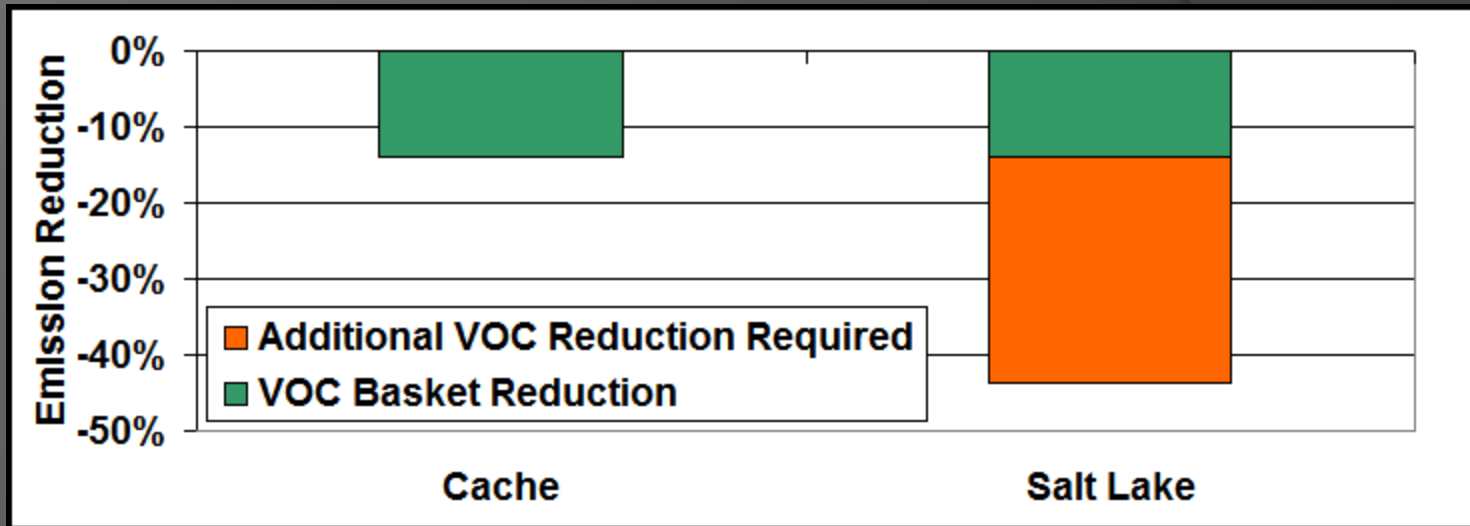
# Future Year Model Attainment Test



# Future Year Basket Strategies



# What Reduction Does Attainment Require?



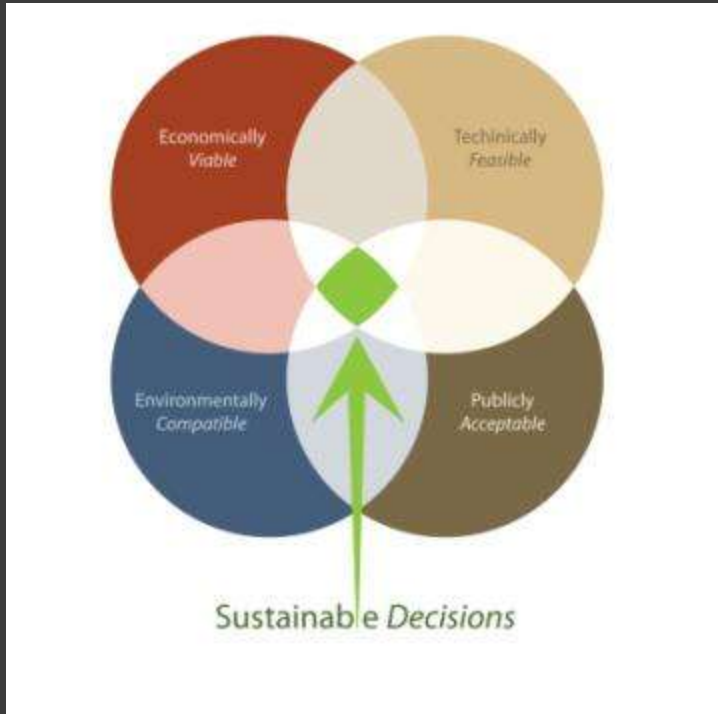
# **Accomplishments & Challenges**

- 1. Mobile Emissions Reduced**
- 2. Strategies are Promoting Healthier Air Quality**
- 3. Large Cities Remain a Problem**
- 4. Reduce Point Source Allowable “Gaps”**



# Breakout Sessions

# The Decision Space and Breakout Rules



## Breakout Fundamentals

- 30 minutes at each table (area/point/mobile) – facilitators rotate. You are assigned to the table matching your agenda color.
- The breakout is a forum for you to ask specific questions and discuss “basket” and other strategies you consider high-value options.
- UDAQ will record key questions and ideas, and will dutifully respond. An optional survey will follow to assess your attitudes about the strategies that have been discussed.

## Rules:

1. **Listen Actively:** Listen carefully to other participants. Only one participant may speak at a time. All may speak in order.
2. **Respect:** Please allow expression of other ideas, even if you disagree. The goal is not to agree, but to develop a deeper understanding.
3. **Speak up, but Play Nice:** Share your views fully and honestly with everyone. All are encouraged to respectfully challenge an idea or ask questions, but no participant may criticize or attack another personally.
4. **No Disruptions:** Stay engaged with your group and avoid side conversations. Also please turn cell phones and pagers off.